

## ABSTRACT OF THE DISCLOSURE

The direct current circuit comprises first to fourth mixers to which high frequency signals and a local oscillation signal having an equal frequency to that of the high frequency signal are inputted, and first and second multiplexer circuits which output components of a sum of two signals. A phase of the high frequency signals which are inputted to the first and second mixers and a phase of the high frequency signals which are inputted to the third and fourth mixers are made to differ from each other by  $\pi$ . A phase of the local oscillation signals which are inputted to the first and third mixers and a phase of the local oscillation signals which are inputted to the second and fourth mixers are made to differ from each other by  $\pi/2$ . The base band signals formed of an in-phase component which are respectively outputted from the first mixer and the third mixer are inputted to the first multiplexer circuit, while the base band signals formed of an ortho-component which are respectively outputted from the second mixer and the fourth mixer are inputted to the second multiplexer circuit.